

Applicant : Charles P. McShane et al.
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Attorney's Docket No.: 08215-301003 / P06-023937

Amendments to the Claims:

This listing of claims replaces all prior versions and listings of claims in the application:

Listing of Claims:

1 – 126. (canceled).

127. (New) An electrical transformer including a housing that contains a transformer core/coil assembly, comprising:

a dielectric fluid surrounding said core-coil assembly, wherein the dielectric fluid is essentially a natural food product and consists essentially of a vegetable oil and an antioxidant compound, and wherein the vegetable oil has a viscosity of between 2 and 15 cSt at 100°C and less than 110 cSt at 40°C.

128. (New) The transformer of claim 127, wherein the antioxidant compound is selected from the group consisting of BHA, BHT, TBHQ, THBP, ascorbyl palmitate, propyl gallate and alpha-, beta- or delta-tocopherol.

129. (New) The transformer of claim 128, wherein the dielectric fluid further comprises at least one of a low temperature additive and an antimicrobial additive.

130. (New) A transformer including a housing that contains a transformer core/coil assembly, comprising:

a dielectric fluid surrounding said core-coil assembly, wherein the dielectric fluid is essentially a natural food product and consists essentially of an oleate modified vegetable oil and an antioxidant compound, and wherein the vegetable oil has a viscosity of between 2 and 15 cSt at 100°C and less than 100 cSt at 40°C.

131. (New) The transformer of claim 130, wherein the antioxidant compound is selected from the group consisting of BHA, BHT, TBHQ, THBP, ascorbyl palmitate, propyl gallate and alpha-, beta- or delta-tocopherol.

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132. (New) The transformer of claim 131, wherein the dielectric fluid further comprises at least one of a low temperature additive and an antimicrobial additive.

133. (New) A transformer including a housing that contains a transformer core/coil assembly, comprising:

a dielectric fluid surrounding said core-coil assembly, wherein the dielectric fluid is essentially a natural food product and consists of a vegetable oil and an antioxidant compound, and wherein the vegetable oil has a viscosity of between 2 and 15 cSt at 100°C and less than 110 cSt at 40°C.

134. (New) The transformer of claim 133, wherein the antioxidant compound is selected from the group consisting of BHA, BHT, TBHQ, THBP, ascorbyl palmitate, propyl gallate and alpha-, beta- or delta-tocopherol.

135. (New) The transformer of claim 134, wherein the dielectric fluid further comprises at least one of a low temperature additive and an antimicrobial additive.

136. (New) A transformer including a tank housing a transformer core/coil assembly, comprising:

a dielectric fluid surrounding said core-coil assembly, wherein the dielectric fluid is essentially a natural food product and consists of an oleate modified vegetable oil and an antioxidant compound, and wherein the vegetable oil has a viscosity of between 2 and 15 cSt at 100°C and less than 110 cSt at 40°C.

137. (New) The transformer of claim 136, wherein the antioxidant compound is selected from the group consisting of BHA, BHT, TBHQ, THBP, ascorbyl palmitate, propyl gallate and alpha-, beta- or delta-tocopherol.

138. (New) The transformer of claim 137, wherein the dielectric fluid further comprises at least one of a low temperature additive and an antimicrobial additive.

139. (New) A transformer including a tank housing a transformer core/coil assembly, comprising:

a dielectric fluid surrounding said core-coil assembly, wherein the dielectric fluid consists essentially of a base oil and additives that increase the functional properties of the base oil, the

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base oil consisting of a vegetable oil having a viscosity of between 2 and 15 cSt at 100°C and less than 110 cSt at 40°C, and the additives consisting of an antioxidant compound.

140. (New) The transformer of claim 139, wherein the antioxidant compound is selected from the group consisting of BHA, BHT, TBHQ, THBP, ascorbyl palmitate, propyl gallate and alpha-, beta- or delta-tocopherol.

141. (New) The transformer of claim 140, wherein the dielectric fluid further comprises at least one of a low temperature additive and an antimicrobial additive.

142. (New) A transformer including a housing that contains a transformer core/coil assembly, comprising:

a dielectric fluid surrounding said core-coil assembly, wherein the dielectric fluid consists essentially of a vegetable oil with a viscosity of between 2 and 15 cSt at 100°C, and less than 110 cSt at 40°C and an antioxidant compound; and wherein the dielectric fluid has: (a) a minimum dielectric breakdown of greater than or equal to 30 kV; (b) a fire point of greater than 300°C; and (c) a pour point between -15 and -25°C.

143. (New) The transformer of claim 142, wherein the antioxidant compound is selected from the group consisting of BHA, BHT, TBHQ, THBP, ascorbyl palmitate, propyl gallate and alpha-, beta- or delta-tocopherol.

144. (New) The transformer of claim 143, wherein the dielectric fluid further comprises a least one of a low temperature additive and an antimicrobial additive.

145. (New) A transformer including a housing that contains a transformer core/coil assembly, comprising:

a dielectric fluid surrounding said core-coil assembly, wherein the dielectric fluid consists essentially of an oleate modified vegetable oil with a viscosity of between 2 and 15 cSt at 100°C and less than 110 cSt at 40°C and an antioxidant compound; and wherein the dielectric fluid has: (a) a minimum dielectric breakdown of greater than or equal to 30 kV; (b) a fire point of greater than 300°C; and (c) a pour point between -15 and -25°C.

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146. (New) The transformer of claim 145, wherein the antioxidant compound is selected from the group consisting of BHA, BHT, TBHQ, THBP, ascorbyl palmitate, propyl gallate and alpha-, beta- or delta-tocopherol.

147. (New) The transformer of claim 146, wherein the dielectric fluid further comprises a least one of a low temperature additive and an antimicrobial additive.

148. (New) A method of using a transformer, comprising employing in the transformer a dielectric fluid, the dielectric fluid consisting essentially of a vegetable oil and an antioxidant compound, wherein the vegetable oil has a viscosity of between 2 and 15 cSt at 100°C and less than 110 cSt at 40°C, and wherein the dielectric fluid is essentially a natural food product.

149. (New) The method of claim 148, wherein the antioxidant compound is selected from the group consisting of BHA, BHT, TBHQ, THBP, ascorbyl palmitate, propyl gallate and alpha-, beta- or delta-tocopherol.

150. (New) The method of claim 149, wherein the dielectric fluid further comprises at least one of a low temperature additive and an antimicrobial additive.

151. (New) A method of using a transformer, comprising employing in the transformer a dielectric fluid, the dielectric fluid consisting essentially of an oleate modified vegetable oil and an antioxidant compound, wherein the vegetable oil has a viscosity of between 2 and 15 cSt at 100°C and less than 110 cSt at 40°C, and wherein the dielectric fluid is essentially a natural food product.

152. (New) The method of claim 151, wherein the antioxidant compound is selected from the group consisting of BHA, BHT, TBHQ, THBP, ascorbyl palmitate, propyl gallate and alpha-, beta- or delta-tocopherol.

153. (New) The method of claim 152, wherein the dielectric fluid further comprises a least one of a low temperature additive and an antimicrobial additive.

154. (New) A method of using a transformer including a housing that contains a transformer core/coil assembly, comprising: employing in the transformer a dielectric fluid surrounding said core-coil assembly, wherein the dielectric fluid consists essentially of a base oil

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and additives that increase the functional properties of the base oil, the base oil consisting of a vegetable oil having a viscosity of between 2 and 15 cSt at 100°C and less than 110 cSt at 40°C, and the additives consisting of an antioxidant compound.

155. (New) The method of claim 154, wherein the antioxidant compound is selected from the group consisting of BHA, BHT, TBHQ, THBP, ascorbyl palmitate, propyl gallate and alpha-, beta- or delta-tocopherol.

156. (New) The method of claim 155, wherein the dielectric fluid further comprises a least one of a low temperature additive and an antimicrobial additive.

157. (New) A method of using a transformer, comprising employing in the transformer a dielectric fluid, the dielectric fluid consisting of a vegetable oil and an antioxidant compound, wherein the vegetable oil has a viscosity of between 2 and 15 cSt at 100°C and less than 110 cSt at 40°C, and wherein the dielectric fluid is essentially a natural food product.

158. (New) The method of claim 157, wherein the antioxidant compound is selected from the group consisting of BHA, BHT, TBHQ, THBP, ascorbyl palmitate, propyl gallate and alpha-, beta- or delta-tocopherol.

159. (New) The method of claim 158, wherein the dielectric fluid further comprises a least one of a low temperature additive and an antimicrobial additive.

160. (New) A method of using a transformer, comprising employing in the transformer a dielectric fluid, the dielectric fluid consisting of an oleate modified vegetable oil and an antioxidant compound, wherein the vegetable oil has a viscosity of between 2 and 15 cSt at 100°C and less than 110 cSt at 40°C, and wherein the dielectric fluid is essentially a natural food product.

161. (New) The method of claim 160, wherein the antioxidant compound is selected from the group consisting of BHA, BHT, TBHQ, THBP, ascorbyl palmitate, propyl gallate and alpha-, beta- or delta-tocopherol.

162. (New) The method of claim 161, wherein the dielectric fluid further comprises a least one of a low temperature additive and an antimicrobial additive.

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163. (New) A method of retrofilling a transformer, comprising: removing an existing dielectric fluid from the transformer; drying the transformer; and replacing the existing dielectric fluid with a dielectric fluid consisting essentially of a vegetable oil and an antioxidant compound, wherein the vegetable oil has a viscosity of between 2 and 15 cSt at 100°C and less than 110 cSt at 40°C, and wherein the dielectric fluid is essentially a natural food product.

164. (New) The method of claim 163, wherein the antioxidant compound is selected from the group consisting of BHA, BHT, TBHQ, THBP, ascorbyl palmitate, propyl gallate and alpha-, beta- or delta-tocopherol.

165. (New) The method of claim 164, wherein the dielectric fluid further comprises at least one of a low temperature additive and an antimicrobial additive.

166. (New) A method of retrofilling a transformer, comprising removing an existing dielectric fluid from the transformer; drying the transformer; and replacing the existing dielectric fluid with a dielectric fluid consisting essentially of an oleate modified vegetable oil and an antioxidant compound, wherein the vegetable oil has a viscosity of between 2 and 15 cSt at 100°C and less than 110 cSt at 40°C, and wherein the dielectric fluid is essentially a natural food product.

167. (New) The method of claim 166, wherein the antioxidant compound is selected from the group consisting of BHA, BHT, TBHQ, THBP, ascorbyl palmitate, propyl gallate and alpha-, beta- or delta-tocopherol.

168. (New) The method of claim 167, wherein the dielectric fluid further comprises a least one of a low temperature additive and an antimicrobial additive.

169. (New) A method of retrofilling a transformer, comprising removing an existing dielectric fluid from the transformer; drying the transformer; and replacing the existing dielectric fluid with a dielectric fluid consisting essentially of a vegetable oil and an antioxidant compound, wherein the vegetable oil has a viscosity of between 2 and 15 cSt at 100°C and less than 110 cSt at 40°C.

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170. (New) The method of claim 169, wherein the antioxidant compound is selected from the group consisting of BHA, BHT, TBHQ, THBP, ascorbyl palmitate, propyl gallate and alpha-, beta- or delta-tocopherol.

171. (New) The method of claim 170, wherein the dielectric fluid further comprises at least one of a low temperature additive and an antimicrobial additive.

172. (New) A method of retrofilling a transformer, comprising removing an existing dielectric fluid from the transformer; drying the transformer; and replacing the existing dielectric fluid with a dielectric fluid consisting essentially of an oleate modified vegetable oil and an antioxidant compound, wherein the vegetable oil has a viscosity of between 2 and 15 cSt at 100°C and less than 110 cSt at 40°C.

173. (New) The method of claim 172, wherein the antioxidant compound is selected from the group consisting of BHA, BHT, TBHQ, THBP, ascorbyl palmitate, propyl gallate and alpha-, beta- or delta-tocopherol.

174. (New) The method of claim 173, wherein the dielectric fluid further comprises at least one of a low temperature additive and an antimicrobial additive.